



Governor's Office of
Emergency Services

Earthquake Program

Post-Earthquake Housing Recovery: Issues for Local Governments and the Community



Cottage Built from Roof Tin. Camp Life of Refugees.

**Post-Earthquake Housing Recovery:
Issues for Local Governments and the Community**

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This report is part of a larger, two-year project of the Earthquake Program, Coastal Region, California Office of Emergency Services. The project began in 1996, involved two design charrettes in late 1996 and early 1997, convened three focus groups in 1997, and will culminate in the development of a ***Planning Guide for the Provision of Post-Disaster Housing in Urban Areas*** in late 1998. The recommendations that emerged from the charrettes and focus groups are summarized here; the most feasible and beneficial ones will be included in the ***Planning Guide***. For copies of the charrette reports or more information on the project in general, contact Sarah Nathe, Earthquake Program, OES Coastal Region, 1300 Clay Street, Suite 400, Oakland, CA 94612, (510) 286-0858

The cover photograph of 1906 earthquake refugees is from the California Heritage Collection of the Bancroft Library at UC Berkeley.

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Chapter 1

The Potential Problems

In a Nutshell

Housing provision after the Loma Prieta and Northridge earthquakes revealed deficiencies in the U.S. system, particularly as it pertains to interim and replacement low-income housing in dense urban areas. The unprecedented numbers of people displaced by the Kobe, Japan earthquake pointed up the shortcomings in our plans and ability to shelter and temporarily house all the people that may be rendered homeless in a damaging earthquake in a California city.

Any community in a seismically active area that has old housing stock, insufficient affordable housing, and a low vacancy rate can be fairly certain it will have a housing crisis following a good-sized earthquake. The resources available to repair or replace damaged housing are grossly inadequate to the scale of loss we will see.

The Housing Assistance System

Among the shortcomings in our organizational arrangements for post-disaster housing are the following: the state and federal government programs available for immediate financial aid are not intended for typical tenants of affordable houses and apartments or single room occupancy hotels; there will be a need for interim housing, but no quick way to build it or site it; because interim housing will be inhabited for from one month to a two or three years, the siting will result in a community battle; the site finally chosen will be crowded and unattractive, and its location may be quite a distance from the original dwelling; the community will be dispersed; and the very character and economic viability of the community will be threatened.

Currently, the Red Cross provides short-term shelter, typically in schools or community centers. Longer-term housing is available through housing vouchers from Federal Emergency Management Agency and/or the U.S. Department of Housing and Urban Development. Other organizations such as the Red Cross and Mennonite Relief Services help build and repair housing. Sometimes, FEMA provides housing in the form of trailers or other temporary structures; however, Federal Emergency Management Agency intends to phase out the provision of trailers—especially for heavily populated urban centers—because their delivery is too complicated and the whole process is costly and inefficient.

The arrangement causes hardship to individuals, families and communities; and it is a drain on community resources at all levels of government. This document will discuss likely scenarios for damage and housing loss, and propose actions that can be taken by local governments and community organizations—before the disaster and after—to prepare to furnish post-disaster housing its citizens, especially those that will need it most acutely.

Lessons of the Past

From the earthquakes in Northridge and Kobe, Japan, we have gotten a clear and sobering picture of our potential housing problems following an earthquake in older urban areas in California. In Northridge, over 25,000 dwelling units were permanently lost or severely damaged. Most displaced people needed shelter only a brief time, however, because there was a 9% vacancy rate in the Los Angeles area at the time, and habitable alternate units could be found fairly easily and paid for with FEMA housing vouchers. The major problem was that half of the lost or damaged units were low-cost housing, and one year after the quake, less than half of buildings with such units had been repaired. The owners of them either had not found financing for repair and rebuilding, or had decided to walk away and forfeit their equity. This is precisely what can be expected with the so-called affordable housing after future quakes.

Half of the \$25 billion spent so far on Northridge damages has been spent on repair and restoration of housing units. Half of that \$13 billion spent on housing has been covered by insurance payments. Such a hefty pay-out by private companies is not likely in the future given the current earthquake insurance coverage (CEA) available in California, and the decreasing numbers of people who are purchasing earthquake insurance. Some recovery experts fear that additional housing units will be lost through fires purposefully started by owners that don't have earthquake insurance, but want their losses covered somehow.

Following the Kobe quake, the sheer number of displaced people was shocking. In the greater Kobe area, with a population of around 1.6 million people, more than 300,000 people used public shelters. Additional unknown numbers of displaced people sheltered with family or friends. That works out to about 20% of the population with no habitable housing. Damage to housing units breaks down as follows: 100,200 were totally destroyed (by earthquake damage or fire); 108,400 were partially destroyed; and 185,700 were damaged (but many continued to be occupied). Over three years after the quake, there are still 35,000 people—predominantly old and poor—in temporary housing compounds scattered throughout the cities and on their outskirts.

In the Bay Area, studies by ABAG and the Bay Area Red Cross have indicated a very large number of displaced people that will have to be sheltered and housed following earthquakes on the Hayward or San Andreas fault. An updated Hayward fault scenario by Earthquake Engineering Research Institute and a transportation study by ABAG have shown the extensive losses to the infrastructure, lifelines, and roads that will be hampering every effort to meet people's needs. A report by Mary Comerio of UC Berkeley has shown us that financing the repair and rebuilding of earthquake damaged housing will be the biggest challenge of all.

In light of the possible extensive losses any California urban area could suffer, it is clear that there will be three huge challenges:

- 1) Displaced people--in a worst case scenario, it will be necessary to provide immediate shelter to 20%-25% of a community's population. In an area like Oakland, that could mean sheltering around 90,000 people. Current capacity in traditional short-term shelters is for considerably less than that.

- 2) Interim housing--given the potential number of damaged or destroyed dwelling places, much interim (1 month to 2 years) housing will be needed, preferably on scattered sites in close proximity to an existing neighborhood or area so the warp and weft of the community is not rent. This may involve finding temporary housing sites in small parks, cleared damage sites, vacant spaces such as those adjoining expressways and freeways, and in streets that can be temporarily closed. Jurisdictions may also need to consider allowing residents to camp or erect temporary structures on their own lots.
- 3) Replacement housing--simultaneously, rapid provision of replacement housing will be necessary, since the interim housing should have a fairly short and finite life. In Mexico City after the 1985 earthquakes there, interim housing (corrugated sheet metal structures) was quickly erected close to the original sites. Meanwhile, the planning, financing and design proceeded on 48,000 permanent in-fill housing units of high design and social quality.

Providing interim and replacement housing in a future California urban earthquake or other large-scale disaster will be a great challenge. The planing, building, financing, and politics of any of the above undertakings will be complex and time-consuming. Especially so, if some policy and program changes are not made now.

Bay Area Vulnerability

A major earthquake on the Hayward or San Andreas faults in the Bay Area will damage thousands of dwelling units and make hundreds of thousands of people homeless on both sides of the Bay. All types of dwellings will be vulnerable to destruction. Older wood frame houses will be damaged, as will multi-family wood frame apartment buildings. Many single room occupancy hotels and older apartments in downtown areas will be closed until they are repaired or replaced (which could take months if not years), with the result that their inhabitants will need interim housing for many months.

For short- and long-term housing needs, every aspect of our current housing stock is working against us. In areas of eastern San Francisco and along the western side of the East Bay, the housing stock is old, predominantly multi-family, and with a very low vacancy rate. The population is ethnically diverse, incomes are modest, and rents are *relatively* low. Land is very expensive. Table 1, below, provides additional detail.

Table 1 Population and Housing in Three Bay Area Counties (1990 Census)

<i>County</i>	<i>Population</i>	<i>Total Housing Units</i>	<i>Median Household Income</i>	<i>Median House Value</i>
Alameda	1,300,000	504,000	\$37,500	\$227,200
Contra Costa	804,000	316,000	\$45,000	\$219,400
San Francisco	724,000	328,000	\$33,400	\$298,900

Each one of these factors will guarantee high damages, large numbers of displaced people, few back-up dwelling units, and limited resources for alternate approaches or swift rebuilding.

In a 1996 study of post-earthquake housing problems by the Association of Bay Area Governments (ABAG), it is estimated that roughly 70,000 dwelling units in Alameda and Contra Costa counties, and slightly over 16,000 units in San Francisco, will be declared unsafe for habitation following a Hayward fault earthquake (see Table 2).

Table 2 Estimated Uninhabitable Dwelling Units After an M7.0 Earthquake on the Northern Hayward Fault (ABAG 199:)

<i>County</i>	<i>Red-Tagged Homes and Apartments</i>	<i>Yellow-Tagged Apartments</i>
Alameda County	31,000	24,600
Contra Costa County	4,700	4,100
San Francisco County	4,400	12,600
Marin County	300	300
Other five counties	200	400
Total	40,600	42,000

As a result, about 35,000 people will be displaced in San Francisco (see Table 3). In the East Bay, where considerably more units will be unusable, approximately 168,000 people will be displaced.

TABLE 3. PEOPLE DISPLACED

County	Alameda	Contra Costa	Marin	Napa	San Francisco	San Mateo	Santa Clara	Solano	Sonoma	TOTAL
Red Tag # People Displaced	92761	12779	3049	38	13585	137	431	505	292	123577
Yellow Tag # People Displaced	55600	7100	1933	20	21347	465	549	442	112	87568
Total # of People Displaced	148361	19879	4982	58	34932	602	980	947	404	211145

Despite the quantitative differences, however, both areas have similar challenges. Where can interim housing be located? With the area housing vacancy rate at about 1%, there are not many nearby alternate dwelling units to which displaced people can move. Removal of entire neighborhoods to comparatively distant areas is not feasible for a couple of reasons: 1) there are very few open spaces in the immediate Bay Area to which large numbers of people could be moved; and 2) it will be very important to the inhabitants, and to the social and economic fabric of the affected cities, to keep as many of them as possible in their neighborhoods.

Pressing Issues

In 1997, we sponsored two design charrettes to examine the likely impacts of such earthquakes on a couple of typical Bay Area neighborhoods. Participants in the design charrette on the Tenderloin neighborhood in San Francisco projected over 1500 people displaced in the nine-block area under consideration. Those involved in the charrette on the San Antonio/Fruitvale area of Oakland foresaw as many as 550 people displaced in a prototypical 12 blocks in that neighborhood. Large numbers of people will be forced to live in parks, vacant lots, and even on closed streets for months, if not years. Many neighborhoods will be hard-hit, so relocation to nearby areas is not much of a possibility.

To re-house so many people both temporarily and permanently will require exceptional steps be taken by many levels of government. Among the local government agencies most heavily involved are the building department, the planning department, and housing and community development. They will need extraordinary levels of cooperation and assistance from state and federal agencies responsible for disaster assistance, housing funds, accessibility standards and regulations, and repair codes. Community-based and neighborhood organizations, as well as non-profit and for-profit housing developers, will also participate in the planning and politics (which will be extensive) to some extent.

Charrette participants identified some critical issues that will be faced by each of three major kinds of organizations: 1) building officials, 2) other local government departments, and 3) finance and development specialists.

Late in 1997, we convened three focus groups to explore solutions to the critical issues. The focus groups were made up of officials and specialists from around California—some of them with experience in earthquake recovery and others lucky so far—who spent the better of a day talking with us and with each other.

In the following sections we note the issues, as well as the suggestions of three focus groups that considered them.

Chapter 2

Issues for Building Departments

Local building officials will be asked to be flexible about their enforcement of the local codes. Both charrette groups saw a pressing need for: A) rapid inspections; B) rapid repair of structural damage; and C) speedy erection of temporary housing structures.

1. Rapid inspection of all damaged buildings will be a very high priority. How can that be accomplished?
2. Create building inspection "deputy" teams. Offer formal training now to local building and design professionals so they can help out with the big job of damage inspection after the quake.
3. Agree on criteria for reoccupying yellow-tagged buildings. Allow residents of those **without structural damage** to move back in. This would reduce the numbers in the streets markedly (especially in the Tenderloin). Repair of nonstructural damages could take place after they're in.
4. Rapid repair of structurally damaged buildings will be crucial; make technical support available to building owners for getting design and engineering work completed in one month.
5. Pertinent building officials and code organizations must quickly agree on repair standards. Leadership from large jurisdictions will be needed to assist smaller cities. How can this network be quickly established?
6. How can local building departments review **and permit** the repair plans in one to two months?
7. Construction can be speeded up by using non-union and volunteer labor (perhaps displaced residents), and by stockpiling materials.
8. Speedy erection of temporary housing structures will necessitate that local building departments interpret the building code less stringently. They could enact emergency standards and procedures for interim housing, assuming state law permits relaxed standards. New criteria for permitting and plan check of temporary structures will be needed.
9. Accessibility issues must be accommodated to an extent, but not to such a degree that interim units are made essentially permanent and prohibitively expensive.
10. In owner-occupied single family units (San Antonio/Fruitvale), put up interim units in backyards or front yards that can be stick-built on-site, or prefabricated

panels, or core construction. Later, these units can be used by the owner as second units or garages. Density issues must be dealt with.

11. To encourage the rebuilding necessary to re-house the displaced, local building departments should grant exemptions from the building codes. Under the emergency conditions, they could require the what is necessary for safety and habitability, but waive for five years regulations more stringent and costly.

12. Both charrette groups pointed out that retrofit projects NOW will reduce the number of dwelling units uninhabitable after a big quake. We know retrofit will drastically reduce damages and the number of displaced people, but what are local governments doing to promote and support it?

The focus group made up of building officials and code specialists considered those and other points, and made the following suggestions for coping with the problems mentioned. The [bracketed words] indicate the governmental level at which some policy or program must be made or changed.

Focus Group Findings

a. Building Inspections

- Local government needs to know how to request the state volunteer inspectors they need quickly. Can we develop a formula they can use to calculate the optimal ratio of engineers to damage? [local, state]
- Experience has shown that cities actually need double the number of inspectors they think they need.
- Local government also needs to better handle the volunteer engineers once they get them. They should be directed to do rapid surveys to ascertain serious damage, a sort of triage of buildings needing extensive inspection. [local]
- The state (OES) should do a document for cities on how to implement the state volunteers program.
- We should assemble a briefcase of tools needed by local building departments to handle the pressing need for inspections and the influx of volunteers. [state]
- Neighborhood groups can be used to report where damage is most severe, if they're trained. [local]
- San Francisco has a program now that trains licensed structural engineers and architects who are under contract to individual owners, and who will give the inspection of their private buildings high priority after a quake. [local]

- Detailed and repeated inspections will be necessary because of aftershocks. [local]
- State volunteer inspectors leave too soon, in a couple of ways: 1) individuals aren't there more than 3 or 4 days; and 2) the whole bunch leaves in a few weeks. The three-day limit on a volunteer's stay is too short because they're just getting the feel after that period of time. Are 6,000 trained inspectors statewide enough? [state]
- Local building department staffing must be increased somehow. They will need people taking phone calls, to note damage reports and give estimate of when inspection may take place. [local]
- Getting people back into safe houses is a huge problem. Perhaps neighborhood groups could be trained to reassure people that green-tagged buildings are OK to go back into. [local]
- Inspectors need to be trained on more than just red/green placards: because of the large number of displaced people, there will be pressure to reoccupy some of the minimally damaged buildings. Put more habitability issues into ATC 20 training. [state]
- Some cities (SF for example) have a SECURE tag--orange means "not a threat to public safety." [local]
- Yellow placards now allow restricted use, but many people don't realize that.
- Change the Health and Safety Code to incorporate a definition of "habitable in an emergency." The code doesn't really reflect or take into consideration the exigencies of real life. [local, state]
- Create workable criteria on habitability—Housing Departments can do that; they inspect for habitability routinely. [local]
- Local government does not have CLEAR authority to waive state standards
- Owners and inhabitants will need to be informed that their buildings are habitable and why. Clarify the legal obligations of inspectors, especially in emergency situations. Legal liabilities of owners need to be clarified too. [local]
- Individual owners, at their own risk, should be able to go into their red and yellow-tagged buildings. [local]

b. Repair Issues

- We need to develop standards (related to code) for typical repair problems encountered after earthquakes. [state, CALBO] FEMA has a new rule that requires cities to have adopted repair standards BEFORE they are included in a federal disaster declaration (not after).
- We should also develop model policies for typical problems [state, local]

- Allow temporary shoring of yellow tags in order to make them habitable [state, local]
- Consider having two phases of repair: one for habitability, and a later one for completion. [local]
- The San Francisco program that trains licensed structural engineers and architects for inspections also allows them to be issued permits for repair of structural EQ damage. [local]
- After-the-fact permits are loaded with problems, but they do speed things up. [local]
- Local government can get extra inspectors and plan checkers to help with the repair process, and FEMA will pay for them. [local]
- Repair standards for large apartment houses must consider liability issues for owners. Stick with fairly strict long-term structural repair standards. Allow leeway in standards for architectural details. [local]
- Not practical to bring ALL repaired buildings up to code: allow exceptions up to 75% of the code. [local]
- There is already language in the code covering artists' live/work studios
- Land use, accessibility, parking—all nonconforming rights are BIG issues. Existing nonconforming conditions—clarify what IS a habitability/safety issue. Waive whatever else is possible. [local]
- Finance is critical to repair. Without cash flowing, much repair won't happen. Local government must insert itself into disaster assistance process, and do what it can to direct monies to the recovery most critical to community survival. Housing may be it. [local]

c. Interim Housing

- Have already prepared plans for stick-built construction of interim units (determine standards now). [state, local]
- Have pre-approved standards for modular structures. Some possible MINIMUM standards for moduls: a) substantially strong, b) fire-resistant, c) sanitary systems OK, d) electrical system OK, and e) heat. [state, local]
- Single-room occupancy standards in the 1994 code could be the basis for the above standards.
- Involve manufacturers of modular structures NOW to begin making moduls according to already accepted or approved standards. [state, federal]

- Get into state law language allowing interim structures not up to the UBC for an emergency period of time. Allow local governments to waive some code requirements in emergency situations. [state]
- Local officials can do much with emergency declarations to allow for exceptions to codes and standards—they should have the declarations already drafted up and ready for quick use. [local]
- Local governments or the state could set up an arrangement whereby there are pre-approved contractors to do stick-builts, and pre-approved management firms to deal with bidding. One construction firm could then do ALL the stick-builts for a specific neighborhood/block. This would reduce chaos and speed the process. [state, local]
- Be mindful of the potential “ghost town” problem: keep interim housing units in the neighborhood to obviate the ghost town potential. [local]
- BUT guard against creating with the interim housing permanent long-term substandard housing. [local, state, federal]

Chapter 3

Issues for other Local Government Departments

Local governments will be asked to be flexible about their enforcement of local ordinances and zoning restrictions. In addition to some of the requirements mentioned above, charrette groups saw a pressing need for: A) provisions for some of the interim units to become permanent; and B) rebuilding of destroyed or demolished housing structures as quickly and cheaply as possible.

1. Getting displaced people back into their own houses is the cheapest, least disruptive approach. What can local governments do to speed that up? What minimum level of utilities and government services will be necessary in the first couple of months? What will local government allow?
2. Two kinds of interim housing units will be needed: a) short-term units (2-6 months) for people who can get back into their houses quickly; and b) longer term units (3-4 years) for people who must wait for their houses to be rebuilt. Do local governments know now locations to put such structures after a future quake?
3. What provisions must be made to site interim housing in parks? How long could the units be there? Which city/county departments would be involved?
4. What provisions must be made to site interim housing on school play fields?
5. Which government departments would be involved in siting housing on some streets?
6. Can privately owned sites (parking lots, vacant lots) be made available for interim housing and short-term neighborhood service provision? Can they be rented? Is there such a thing as emergency, temporary eminent domain?
7. Many of the potentially damaged neighborhoods in the East Bay have been--or will be--downzoned. After the earthquake, the total number of dwelling units will be reduced. The displaced people can't go to other neighborhoods because those will be damaged too. If maintenance of neighborhood character and community is important, ways must be found to keep the pre-quake density.
8. Interim units could be added to backyards. The first five lot owners per block that agree to take a modular backyard unit will be able to keep it forever, after making improvements. Adopt a policy that those who provide space for such units will never have them counted as non-conforming units in the future.
9. Owners of apartment houses could be rewarded for quickly repairing their buildings by being allowed to keep their pre-quake number of units.

10. A major issue in some cities is the potential loss of rent-controlled units. In other cities, there is concern that affordable housing will be lost to gentrification, as apartments are turned into condominiums or town houses. What steps can be taken to guarantee that affordable housing is not lost during the recovery period?
11. What will it take to get planning departments to waive or revise requirements for parking spaces?
12. Accessibility issues must be accommodated to an extent, but not to such a degree that interim units are made essentially permanent and/or prohibitively expensive.
13. To encourage the rebuilding necessary to re-house the displaced, local planning departments should waive fees and speed up plan approval, and generally be as flexible as possible.
14. Money is critical for rapid repair and rebuilding. Where does it come from?

Focus Group Findings

The focus group made up of personnel from various city and county planning, public works, emergency services, housing authorities and departments, and city manager's offices considered all issues mentioned above, and made the following suggestions for coping with the problems anticipated.

a. Rapid Inspection

- It's incumbent on cities to make sure they have enough people around immediately after the disaster, and over time. Beyond the Department of Building Inspection, other city staff could be trained to do it, as could other building professionals in the community. Community response teams can be trained for first triage.
- Neighboring communities less hard hit can provide inspectors in a mutual aid arrangement.
- Some cities have set up area teams—they assess vulnerabilities by area before the quake, so after it, inspectors know where to go first.

b. Utilities

- Repair the sewer and water ASAP. Order up porta-potties and bottled water immediately—you'll need them while working on the pipes.
- Temporary above-ground sewer and water pipes should be considered for speed.

- Spontaneous housing will take place, and the city needs to support that with temporary utilities.
- Spontaneous housing in parks should be directed or moved to the place most convenient for utilities and least in the way for other activities.
- City policy on housing locations can be disseminated before and after the quake by the PIO.
- Instructions on digging a pit privy can be made part of the information going out to the public.
- Garbage disposal is also extremely pressing.
- Cities and regional agencies should begin to make inter-jurisdictional plans for coping with these sorts of problems. Involve all pertinent departments in planning efforts.
- Attitude of repairers is critical—service providers must be creative and flexible.

c. Interim Housing

- Keep interim housing as close as possible to where the permanent housing was.
- If you want to save your neighborhoods (and some cities would be nothing without them), the focus the whole recovery plan must be on serving and preserving the neighborhoods.
- CDB Grants under HUD can make “urgent needs” money available.
- Berkeley recently had a measure on its ballot to get permission to put interim housing in parks. It passed. Without some kind of provision like that, the residents may protest against housing in their parks for very long..
- L.A. has provisions like that covered in its Recovery Ordinance. All are generic and can be targeted to any neighborhood.
- Each local government should have some emergency ordinances drafted and ready to take to councils.
- To use private property for the siting of interim housing, the State Redevelopment Law allows for taking of property if a public benefit accrues.
- In Watsonville in '89 an emergency ordinance allowed mobile homes on empty lots.
- Another way to get private property is to make it a market transaction.
- Perhaps space can be negotiated beforehand with entities like BART and EBMUD for space to use.

- Is it feasible, in the East Bay especially to think of a regional short-term plan and overall ordinances for interim housing issues? For example, for regular business now, 24 jurisdictions in the Silicon Valley use one uniform code.
- L.A. has an Emergency Ordinance that provides a way to make necessary decisions quickly (in first month), before politics as usual reasserts itself.
- In L.A. the Emergency Operations Board provides a structure in which extraordinary decisions can be made quickly in exceptional times.
- Deciding who gets into interim housing will be a huge issue? What will the criteria be?
- How will the lucky winners be located and informed? Trained and educated neighborhood groups can help with this if they're used.

d. Repair Incentives and Funding

- To make repair go quickly, there must be funding, and the permit/design process must be streamlined.
- There are various ways to streamline the permitting process. Think about it now and decide what your city policy will be.
- Inspectors can issue permits in the field, if the city so provides.
- Expedite hearings, and hold them out in the neighborhoods on the corners or in the parks.
- Give density bonuses.
- Building demolition requires very close scrutiny.
- Partner-owners and condos are very problematic because they rarely reach consensus, and do nothing quickly.
- Federal Emergency Management Agency can cover costs for repair, with negotiation.
- L.A. Housing got some HUD money to offer as incentive in ghost towns.
- To allow regular banks to make loans they might not otherwise, establish a regional disaster development bank.
- Divert city funds for affordable housing into repair and replacement for a couple of years.
- Patchwork Funding will be necessary: the Community Reinvestment Act requires that private lenders put some money into their community, but the underwriting criteria still apply.
- Cities could sell excess real property to get capital for repair and rebuilding.

- Can tax credits work? It's a state government issue: the State Allocation Board will have to buy in and make a request from federal government.
- Mom and pop apartment owners have few resources, and fewer places to turn for help.
- Cities, especially in the East Bay, may be competing against each other for finite funds.
- Big businesses should contribute to repair of housing for their employees
⇒ put interim housing into parking lots of plants and office parks.
- Arrangements have to be made on ADA and the Fire Code for interim housing.
- Title 24, Chapter 11b says that temporary interruption in access is OK:
 - a) temporary facilities must be accessible or adaptable
5% accessible, and 95% adaptable
 - b) single family units in backyard are exempt (unless paid for by public funds)

e. Mitigation

- To encourage pre-quake mitigation, consider tax credits, loans and grants, and a favorable cost/benefit ratio.
- Rate buildings on a uniform scale of risk.

City Government Team Concept

A small group of the East Bay charrette participants who work for or with city government spent some of their time developing the concept of a city recovery team and describing its makeup. Below is their outline.

a. Recovery Team

The team specified below should be created by an affected city government after a damaging earthquake in order to coordinate the immense task of recovery and reconstruction.

1. Place under the city manager
2. Include a rep from each of the following departments:
 - Planning
 - Finance and Purchasing
 - Housing
 - Public Works
 - Health and Human Services
 - Police and Fire

3. Not all reps need to be at each community meeting, but do when the issue germane to them or when the general direction of recovery provisions requires approval of all

b. Team Functions

1. Planning before the event
2. Coordination among departments
3. Developing and maintaining interaction with neighborhood organizations
4. Developing procedures for streamlining city bureaucracy
5. Recommending policy changes that would streamline
6. Determining available monetary and human resources

c. Planning Department roles

1. Zoning--
 - a. relaxation of zoning regs, at least for temporary housing, and
 - b. streamline permitting process to give priority to demolition and repair
2. Advanced planning--determine whether current general and seismic plans need to be reviewed and revised in light of eq
3. Economic development--work with owners to bring property back:
 - a. this will range from providing economic and regulatory incentives, to
 - b. recommending eminent domain (then legal takes over)
4. First Source--work with Purchasing to tie in city assistance to job creation

d. Finance Department roles

1. Purchasing--streamline process while still maintaining accountability
2. Budget Unit--coordinate monetary resources, and work with other departments to identify private resources

e. Housing Department roles

1. Relocations--case management to coordinate with volunteers (CBOs) and provide the necessary level of service
2. Rehabilitation—
 - a. develop new rehab programs if existing ones are not appropriate
 - b. work with Budget Unit on amount needed
 - c. work with nonprofit developers (or other developers) when owner wants to sell

f. Community Interface Unit roles

1. Evaluation of resources in the community
2. Organizing volunteer efforts
3. Liaison with the community (at one-stop center) and with other departments

g. Health and Human Services

1. Relate existing services to neighborhood needs
2. Develop new services needed at one-stop center

h. Fire and Police--involved in overall coordination

i. Resources

1. Federal
 - FEMA
 - SBA
 - HUD
 - CDBG
 - GF
2. State
 - lobbying
3. Private lenders--city can help private owners with access to this
4. Insurance
5. Nonprofits
6. Churches
7. Volunteers

j. Policy Issues--to be addressed at pre-event meetings of task force

1. Process for community involvement
2. Right of first refusal for displaced renters
3. Rent freezes
4. Use of condemnation and eminent domain
5. Rezoning issues (such as downzoning/rezoning)
6. Interim housing processes
7. Historic preservation
8. Recycling of debris
9. Health concerns--relaxing or strengthening health code
10. Relaxing building codes for interim housing
11. Role of Planning Commission in the interim period
12. Speeding up permitting process
13. Creating monetary and regulatory incentives for early rebuilding and repair
14. Electronic exchange of data

k. Community Recovery Center--to streamline recovery process

1. One in each affected neighborhood
2. Includes rep from relevant city departments and other organizations (federal, state, social service agencies, lenders)
3. Provides a consistent location for community meetings
4. City liaison from the city's recovery team

Chapter 4

Issues for Finance & Development Experts

To re-house so many people both temporarily and permanently will require many levels of government and private sector organizations to work together to find the money to do so. Many suggestions have been offered above, but the overarching question is how any of this can be financed and developed.

1. To get displaced people back into their own houses will cost money. From where will financing for repairs come? Federal programs? State programs? Local? The private sector: nonprofits and/or for-profits?
2. What arrangements need to be made to contract with one or two construction firms to do all the work in one area? It would increase the efficiency.
3. For the two kinds of interim housing units, are some types of financing more applicable to one kind than to the other? If some interim housing units become permanent, does that change the funding?
4. What if land for interim housing needs to be leased? How can that be funded?
5. About 75% of the displaced people in the East Bay are renters. The data are similar for the Tenderloin. Relocation of renters will be difficult due to the 1% vacancy rate we have in our housing market. In the East Bay, it will be nearly impossible because all neighborhoods will be damaged. In San Francisco, it will be complicated by there not being many other neighborhoods with affordable housing. What federal, state, or local funds can be used to assist renters?
6. Can current policies and programs be changed now to provide better for renters?
7. Owners of apartment houses will need financial assistance for quickly repairing or rebuilding their structures. What funds are available for various kinds of owners:
 - a) single owners of small complexes
 - b) business partner owners
 - c) extended family owners
8. Current federal programs in HUD and SBA don't accommodate many of the above types of owners. How can programs and policies be changed to do so?
9. To encourage the repairs and rebuilding necessary to re-house the displaced, financial institutions should speed up loan approval, perhaps change the criteria for loans, and generally be as flexible as possible. What pressures can local governments bring to bear on local financial institutions to become more flexible and generous?

10. Nonprofit housing developers may be in a good position to restore affordable housing in damaged urban areas. Can program and policy changes be made to assist them, or must they (and we) look forward to the complicated, lengthy process they typically go through to put together crazy-quilt finance packages from many loan sources and federal/state programs?

11. For-profit housing developers may be able to work faster to restore housing—both affordable and market-rate. What steps can governments at all levels take to assist these developers? Work before the quake to identify developers to support and encourage after the quake.

The focus group made up of representatives of FEMA, HUD, and FNMA; lenders; city redevelopment or community development departments; nonprofit housing developers, and apartment associations considered those and other points, and made the following suggestions for coping with the problems mentioned.

Focus Group Findings

a. Mitigation NOW

- Cities should do what they can now to increase the survivability of the vulnerable buildings.
- In SF seismic retrofit bond money is not being much used, because: a) it's not easy to get (the application form is burdensome); b) under rent control, you must pay to relocate tenants while retrofit work is going on; and 3) better loan rates are available from banks and other lenders right now.
- Information and assistance for all loans and grants must be focused, packaged, and delivered well in order to increase use.
- Tax credits are available for historic preservation, but it would be desirable to make them available for mitigation in other buildings.
- Retrofitting wood frame apartments is not tricky or expensive, but for the average apartment owner, the cost/benefit ratio doesn't work out. Other incentives must be made available.

b. Interim Housing

- For providing interim housing, Redevelopment Authority set-asides, and leases could be used. Pass legislation now to loosen up what Redevelopment Authorities can do on low-income tax credit: take cap off tax credits for disaster—any state which has a disaster could get a higher per capita tax credit.
- Long-term housing—a lender pool of private lending institutions will assist them in driving their risk down.

- Interim housing could be put in boats and barges in the Bay.
- Have interim housing modulars manufactured and ready for use after any disaster.

c. What the Federal Emergency Management Agency covers:

- Shelter—cost-share with state and local
- Emergency housing—100%
- Public housing—backs up HUD, cost-shares
- Minimal repair for owners--\$10,000, or more if negotiated
- For rapid repair, the federal government can impose allocation requirements on the construction industry to get raw materials
- Construction management firms could be used to coordinate repair:
⇒ identify big ones in advance and have them agree to do post-EQ repair.
- Housing planners need to identify the major government/engineering/contracting lending institutions ahead of time, so they can be prepared to work with them.
- Federal Emergency Management Agency can cover apartment repair under its existing fiat, but it needs to be cost-effective.
- Condominiums associations are very complicated because each owner must agree on what repairs they will do. That takes time and sometime reaches no resolution. The federal government can't do much to change the essential complication.
- Monitor CDBG moneys to make sure they aren't used on projects covered by other disaster funds (as well as Section 8 vouchers).
- Manufactured housing would be a very good option IF it came with sites (but usually it doesn't). Local governments must find the locations, and that can be lengthy process.
- But if a site is found with dispatch, there can be a local, state, federal partnership on managing the housing.
- Start working with owners of affordable apartments now to prepare them for recovery and talk them into mitigation.
- The insurance industry could assist now with mitigation incentives, but they aren't now for various reasons. For example, CEA is offering reduced coverage just when it should offering

more coverage tied to either rewards for mitigation or penalties for lack of it (like car insurance does).

d. What HUD covers:

- Community Development Block Grants
- CDBG Supplementals (to cover what Federal Emergency Management Agency, SBA, and CoE won't pay for)
- Section 108 loans
- HOME funds
- Relocation funds
- Funds used to pay for bonds (what formula can it use to determine distribution of funds?)

e. Rebuilding

- Local government needs to clarify that same uses and density will be required for rebuilt property.
- Local government should relax requirements for: a) life safety, b) accessibility, c) zoning issues, d) historic buildings.
- They should determine ahead of time how they are going to do that—get consensus before the disaster on what level of repair and reconstruction will be required.
- CDBG funds need to apply to CRA mixed use buildings—this gives more flexibility in emergency situations.
- Owners and lenders wanting to maximize the aid they get, wait for the better aid programs which typically come along later in the recovery period. This militates against quick repairs.
- Decision makers on the local level always wait until they know how many federal funds are coming in so there is certainly about amounts available for particular programs. This also militates against quick repairs.
- HUD can't make provisions ahead of time for what will be available because Congress tweaks the programs differently with every disaster.
- Local governments should make a list beforehand of what they want to ask HUD for.
- Provide for certain disaster waivers to be put into the regulations right now.

- Make vacant buildings safety violations as an incentive to repair and rebuilding
- Let SAMCO (which lends to nonprofits) begin to fund low-income housing rebuilding (at \$50 million) as an incentive.
- For-profits and non-profits may be able to work together to provide affordable housing.
- Usability of the financial resources is critically important—both for-profit and non-profit developers must work through very complicated funding processes. It would be desirable to have one application for all federal funds, so that excessive work need not go into patching a number of loans together.
- Use various incentives: 1) density, 2) expiring use buildings

Further Reading

Asano, Mitsuyuki

- 1995 "Characteristics of the Southern Hyogo Earthquake: Damage to Urban Facilities." *The Wheel Extended*, Volume 92, July. Tokyo: Toyota Motor Corporation, International Public Affairs Division.

Association of Bay Area Governments

- 1996 *Shaken Awake! Estimates of Uninhabitable Dwelling Units and Peak Shelter Populations in Future Earthquakes Affecting the Bay Area*. Publication #P96002EQK. Oakland.

- 1995 *On Shaky Ground: Earthquake Shaking Maps for the San Francisco Bay Area*. Publication #P95001EQK. Oakland.

California Seismic Safety Commission

- 1995 *Northridge Earthquake: Turning Loss to Gain*. Report to the Governor, #95-01. Sacramento.

Comerio, Mary C., et al.

- 1996 "Residential Earthquake Recovery: Improving California's Post-Disaster Rebuilding Policies and Programs." *CPS Brief*, Vol. 8, No. 7, September. Berkeley: The California Policy Seminar, University of California.

Earthquake Engineering Research Institute

- 1996 *Scenario for a Magnitude 7.0 Earthquake on the Hayward Fault*. Publication #HF 96. Oakland.
- 1995 *The Hyogo-Ken Nanbu Earthquake, January 17, 1995*. Preliminary Reconnaissance Report, #95-04. Oakland.

Earthquake Program, AIA East Bay Chapter, and ABAG

- 1997 *Post-Earthquake Housing Recovery: Design Charrette Recommendations for the San Antonio/Fruitvale Neighborhoods*. Oakland: California Office of Emergency Services.

Earthquake Program and AIA San Francisco Chapter

- 1996 *Neighborhood Recovery Strategies: Post-Earthquake Housing Charrette Recommendations for the Tenderloin Neighborhood*. Oakland: California Office of Emergency Services.

Earthquake Program

- 1993 *Earthquake Recovery: A Survival Manual for Local Government*. Publication #P93007BAR. Oakland: California Office of Emergency Services.